



## Relation of energy, fat, and fiber intakes to plasma concentrations of estrogens and androgens in premenopausal women

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**Abstract:** To evaluate whether diet may influence the incidence of hormone-dependent cancers through an effect on blood estrogen and androgen concentrations, we analyzed diet-blood hormone relations in a cross-sectional study. Dietary energy, fat, and fiber intakes were estimated from 7-d food records completed by 90 premenopausal women on days 14-20 of their menstrual cycles. Fasting blood specimens were collected on days 5-7, 12-15, and 21-23 of each participant's cycle and pooled to create follicular-, midcycle-, and luteal-phase samples, respectively, for analysis. Energy intake was associated inversely with plasma androstenedione and dehydroepiandrosterone sulfate (DHEAS). averaged across the three menstrual cycle phases, and directly with the probability of a luteal-phase rise in progesterone. For each additional 1 MJ (239 kcal) consumed, androstenedione decreased by 6.0% (95% CI: -8.4%, -3.6%), DHEAS decreased by 5.1% (95% CI: -9.6%, -0.4%), and the probability of a progesterone rise increased by 60% (95% CI: 5%, 145%). After energy intake was adjusted for, the ratio of polyunsaturated to saturated fat (P:S) in the diet was significantly inversely associated with plasma estradiol and estrone during the luteal phase of the menstrual cycle. For each 0.1 increment in the P:S, there was a 7.6% (95% CI: -14.3%, -0.5%) decrease in estradiol and a 6.8% (95% CI: -12.7%, -0.6%) decrease in estrone. Results of this cross-sectional study support a relation between both energy and fat ingestion and plasma sex hormone concentrations in premenopausal women.